National Security Education Center

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# Information Science and Technology Center Seminar Series

DR. GARY HORNE

STEVE ANDERSON

**Gary Horne, Naval Postgraduate School**
**and**
**Steve Anderson, Naval Surface Warfare Center Dahlgren**

## "Data Farming and the Exploration of Inter-agency and Inter-disciplinary "What If?" Questions and Solutions"

**Wednesday, July 20, 2011**
**3:00 - 4:00 PM**
**TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)**

**Abstract:** Data farming uses simulation modeling, high performance computing, and analysis to examine questions of interest with large possibility spaces. This methodology allows for the examination of whole landscapes of potential outcomes and provides the capability of executing enough experiments so that outliers might be captured and examined for insights. This capability may be quite informative when used to examine the plethora of What-If? questions that result when examining potential scenarios that our forces may face in the uncertain world of the future. Many of these scenarios most certainly will be challenging and solutions may depend on interagency and international collaboration as well as the need for inter-disciplinary scientific inquiry preceding these events. In this project we desire to understand both the challenges and solutions that are possibilities in the context of application to questions inherent in decision-making as we consider alternate future scenarios.

**Biographies:** Dr. Gary Horne is a Research Professor in the Operations Research Department at the Naval postgraduate School (NPS) in Monterey California. He has been at NPS for four years. Previously he worked as the Director of Project Albert at the Marine Corps Warfighting Lab in Quantico, Virginia. In this position he led data farming efforts examining questions in the areas of command and control, warfighting experimentation, convoy protection, and anti-terrorist response. During his career in defense analysis that has spanned over a quarter century, Dr. Horne has worked for the Center For Naval Analyses (CNA), The MITRE Corporation, and Referentia Systems, Inc. Currently at NPS he is working on projects involving the Transformable Craft and defeating improvised explosive devices. He is also the Chair of the NATO Modeling and Simulation Task Group “Data Farming Support to NATO.” His recent paper, “Data Farming and Defense Applications,” co-authored with Ted Meyer, won the best overall award at the 2010 MODSIM World Conference. His primary research interests are the development of data farming and simulation and the application of these in the areas of warfare analysis, future scenarios, and Naval applications to humanitarian assistance / disaster relief.

Mr. Steve Anderson is an Operations Research Analyst with the Naval Surface Warfare Center Dahlgren, in Dahlgren, Virginia. Mr. Anderson is a graduate of the Naval Postgraduate school and the Naval War College. Over the past 26 years, Mr. Anderson has worked in support of the Department of Defense Acquisition Community, providing senior decision makers with tailored decision support frameworks, tools, methodologies, and products. Mr. Anderson has conducted studies and analysis for the Naval Sea Systems Command, Office of Naval Research, Office of the Chief of Naval Operations/N81/N85/N86/N88, Marine Corps Systems Command, Marine Corps Combat Development Command, Headquarters Marine Corps, Office of the Secretary of Defense, Joint Staff/J8, Joint Forces Command, and Congress. Mr. Anderson currently serves as a principal scientist on the staff of the Strategic and Weapon Control Systems Department, and supports a range of projects, tasks, and assignments in support of the US Navy, Joint Staff, Office of the Secretary of Defense. Mr. Anderson has a special interest in long-term force design and force planning, which has required him to develop long-term futures contexts typically out 20-50 years. This problem domain is replete with large possibility spaces, and is what led to Mr. Anderson's acquaintance with Dr. Horne.

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**For more information contact the institutional host Frank Alexander, fja@lanl.gov, 665-4518. If you wish to speak to Dr. Horne or Mr. Anderson please contact Josephine Olivas, jojo@lanl.gov, 663-5725.**
**Hosted by the Information Science and Technology Center (ISTC)**